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Buildings

Through operations, the residential sector generates 21% of greenhouse gas emissions, the commercial sector 17% and the industrial sector 10%. (US Energy Information Administration, 2003)

Over the next 30 years, the building stock is projected to grow to nearly 400 billion square feet. About 75% of the buildings will either be built or renovated in that period. (Nelson, 2004)

The City of New York's GHG inventory revealed that over 60% of the city's government emissions were from municipal buildings and 79% of the emissions citywide were related to operation of buildings.(New York City Mayor's Office of Long-term Planning and Sustainability, 2007)

Green schools add 2% to construction costs but result in financial benefits worth 20 times as much. (Kats, 2006)

There is no significant difference in average cost for green buildings as compared to non-green buildings. (Langdon, 2007)

Upfront cost increases for green buildings range from nothing to 2% and lower the expected lifetime operating costs by 20% — 10 times the initial investment. (Kats, 2003)

LEED certified commercial and institutional buildings are designed to use an average of 32% less electricity, 26% less natural gas and 36% less total energy than standard buildings. (USGBC)

Preliminary analysis estimates that the GHG reductions from each new GreenPoint Rated home keeps 2.5 tons of carbon dioxide out of the atmosphere each year. (StopWaste.Org)

A recent survey revealed that of the 134 respondents, nearly 9 in 10 cities surveyed will require city capital projects to achieve green building standards; 56% have a policy in place, and 31% anticipate adopting one within a year. (U.S. Conference of Mayors)

Energy Star Challenge would improve the energy efficiency of commercial and industrial buildings by 10% or more, saving businesses $20 billion a year and reducing greenhouse gas emissions enough to equal those from 30 million vehicles. (US EPA)

Green features included in 2% of new homes built in the United States in 2006, created a $7.4 billion market for green homes. (McGraw Hill Construction, 2006)

Nearly 100,000 certified green homes have been built in the US since the mid-1990s. (National Association of Home Builders)

In the United States, commercial buildings provide approximately 78 billion square feet of floor space. These buildings can save 35% or more on annual energy costs through energy-efficient upgrades, creating more than $25 billion in annual savings. (USEPA)

Green buildings are designed to use 40% less water and construction that results in 70% less solid waste, further reducing emissions over traditional construction and operation. (USGBC)

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The production and use of energy is the single most significant driver of GHG emissions in a community; about 40% of fossil fuel combustion emissions, the primary GHG source, is from the residential and commercial end-use sectors (US EPA, 2007).

Drinking water and wastewater systems account for about 4% of the USA electricity demand. (California Energy Commission, 2005)

Landfills account for about 25% of the methane emissions or about 2% of the total GHG emissions in the USA. (US EPA, 2007)

Seattle has recently developed a 100 year open space plan that considers the impact of integration of water, wastewater, energy and transportation infrastructure systems. (Open Space Seattle 2100)

The City of Albuquerque has committed to a zero waste target and is planning to eliminate its landfill in 2030. (Albuquerque Green)

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The climate is changing faster now than any time in the past 500,000 years. (UNEP, 2007)

Global average temperatures have risen by 0.74 degrees Celsius (1.33 Fahrenheit) in the past 100 years and are forecast to rise by 1.8 to 4.0 C (3.24-7.2 F) by 2100. (UNEP, 2007)

The West and Northwest climates are expected to alter with increased risk of forest fires. The San Diego and San Bernardino fires of 2003 each cost over $2 billion in damages. (Centre for Integrative Environmental Research, 2007)

Washington State is expected to face $93 million in additional costs by 2020 for fire suppression due to a 50% rise in acres burned, rising to 100% more acres burned annually with $124 million in increased costs by 2040 due to climate change. (Centre for Integrative Environmental Research, 2007)

Each year between 2003 and 2007, 7 million acres of the National Forest System have burned, with annual fire suppression costs of over $1.3 billion. (Centre for Integrative Environmental Research, 2007)

Climate change will increase risk of flooding in many areas. The 1997 North Dakota Red River flood caused $1 billion in agricultural production losses. (Centre for Integrative Environmental Research, 2007)

In the Northeast and Mid-Atlantic areas of America, climate change will cause more storms. Since 1980, there have been 70 natural weather-caused disasters averaging over $1 billion in damages to infrastructure alone per event. (Centre for Integrative Environmental Research, 2007)

Climate Change will increase risk of drought for the South and Southwest. Estimated economy-wide losses from a dry year in California's Central Valley are approximately $6 billion a year. (Centre for Integrative Environmental Research, 2007)

The costs from Hurricane Katrina are still not entirely accounted for. Cost estimates range upward of $200 billion, or 1% of the US gross domestic product for the one storm. (Centre for Integrative Environmental Research, 2007)

Peak load demands are predicted to rise by as much as 40% in Massachusetts by 2030 due to climate change driven increases to heating and cooling costs. (Centre for Integrative Environmental Research, 2007)

A 2001 study on climate impact projections predict a 30% decline in snowpack over the Northern Rockies and a 50% decline over the Cascades by 2050.(Centre for Integrative Environmental Research, 2007)

Atmospheric stability can be achieved if 1% of global domestic product is invested annually on emission reductions; failure to do so will result in a 5 to 25% annual loss in GDP through climate change impacts. (Stern, 2006)

To prevent dangerous climate change, emission growth must be reversed within a decade and reductions of 50 to 85% by 2050 will be necessary. (International Panel on Climate Change)

Direct losses from natural disasters increased 14 times between the 1950s and 1990s, with the US experiencing increased floods, heat waves, wildfires, extreme rainfall and hurricanes. (Munich Re, 1999)

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Residents in neighborhoods in inner areas have 36-60% lower travel-related greenhouse gas emissions than those in outer areas. (IBI Group, 2002)

Doubling density will reduce travel-related greenhouse gas emissions by 5%. (Ewing et. al, 2007)

Construction of buildings and infrastructure is responsible for about 20% of neighborhood energy and greenhouse gas emissions over a 50-year assumed lifespan. (Norman et. al, 2006)

Households close to a city's center spend about half as much on travel expenses as those in the suburbs do. (Hagler Bailley Services, 1999)

25 to 33 % of potential buyers prefer infill, mixed-use, and transit-oriented neighborhoods, and this demand is expected to grow as the population ages. (Ewing et. al, 2007)

Public infrastructure costs for sites close to city centers were just 10% of those for projects in the suburbs. (Hagler Bailley Services, 1999)

Cumulatively, compact development could save 8% in development costs and reduce local government deficits by 10% by 2025. (Burchell et. al, 2005)

High density neighborhoods in inner areas are as much as 50% more cost efficient than low density outer suburbs neighborhoods on a life cycle cost basis.(Dillon Consulting et. al, 2005)

Residents of walkable communities are 2.4 times more likely to get 30 minutes a week of physical activity than residents of neighborhoods without walkable features.(Ewing & Kreutzer, 2006)

Vehicle accident rates are about four times lower in high-density urban neighborhoods than in lower-density suburbs. (Ewing & Kreutzer, 2006)

Compact development generates three times less storm water runoff per household than low-density development does. (Heaney, Pitt, & Field, 1999)

Trees can reduce local ambient temperatures by 5 degrees. (McPherson et. al, 2003)

An estimated 7% of regional and sub-regional malls in the U.S. are grayfields and that a further 12% are approaching grayfield status. (Congress for the New Urbanism, 2002)

Two popular traffic calming measures are traffic circles, which are raised islands in the centers of intersections, and chicanes. These two measures reduce collision frequency by about 80%. (Ewing & Kreutzer, 2006)

Infrastructure